

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Buildings Engineer I

Class Code: 40891

A. Purpose:

Implements a capital improvements plan for an agency or institution and provides technical expertise in the planning of facilities to provide adequate accommodations for state activities.

B. Distinguishing Feature:

Buildings Engineers I develop, implement, and coordinate a capital improvements plan for an agency or institution.

Buildings Engineers II oversee the activities of a major section of the organization, for example, field inspection, construction or design.

Buildings Engineer Assistants prepare detailed plans and specifications for bid advertisements, survey construction sites, and inspect construction projects.

C. Functions:

(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions that may be found in positions of this class.)

1. Implements an agency's capital improvements plan by coordinating and designing capital development and maintenance and repair projects to maintain the integrity and functionality of the facility.
 - a. Inspects facilities and solicits information from agency personnel to evaluate the condition of existing facilities and establish construction and maintenance priorities.
 - b. Analyzes facility system operations and establishes procedures to improve maintenance to reduce life cycle costs of the facility.
 - c. Develops and maintains an assessment of the condition of all structures and facilities and long-range plans covering maintenance costs.
 - d. Designs in-house capital development and maintenance projects including specifications for special equipment, materials, and testing.
2. Performs preliminary engineering activities to identify needs and scope of construction projects and resolve problems.
 - a. Researches records to verify state ownership of property prior to construction.
 - b. Researches construction site soils and acquires foundation information.
 - i. Initiates investigations if necessary and negotiates cost proposals.
 - ii. Approves foundations and soils reports.
 - iii. Certifies contractors' payments.
 - c. Negotiates and prepares architectural and engineering contracts.
 - d. Conducts preconstruction meetings.
3. Coordinates and oversees construction projects to ensure compliance with contracts and approved plans and specifications.
 - a. Reviews final plans and specifications and cost estimates for new construction and renovation projects.
 - b. Coordinates project scheduling among engineering or architectural consultants, contractors, and state agency personnel.
 - c. Conducts on-site inspections during construction.
 - d. Manages construction activities of small contracts and force account work including locating and hiring contractors and ordering materials.

4. Reviews and updates construction specifications and special provisions to ensure projects are completed according to current engineering principles and practices.
5. Performs other work as assigned.

D. Reporting Relationships:

Reports to an Engineering Supervisor or the State Engineer. Does not supervise.

E. Challenges and Problems:

Challenged to establish and prioritize statewide maintenance and repair needs. This is challenging because of limited financial resources. Further challenged to stay current in engineering technology and the application of technological advances.

Problems include locating information on specialized materials and procedures, forecasting cost of projects with little or no prior information, and adjustments to in-house project schedules due to emergencies and maintenance problems.

F. Decision-making Authority:

Decisions include what repairs are needed, when repairs should be completed, types of materials used, quality and quantity of materials, whether work achieved is acceptable, if structures or roads are worth repairing, recommendations on consulting firms or contractors to use, and if construction change orders are valid.

Decisions referred include funding authorization for projects, approval of contracts, and priority of repairs and construction.

G. Contact with Others:

Daily contact with agency supervisors and managers to clarify design details of projects and discuss funding and building priorities; and with architects, engineers, professional consultants, and contractors to negotiate contracts, schedule projects and review plan specifications and project requirements; and weekly contact with manufacturers of construction material to acquire materials information, specifications, performance capabilities and descriptive data.

H. Working Conditions:

When making field inspections, buildings engineers are required to inspect all phases of construction projects including crawl spaces, tunnels and roofs; prior to completion of construction projects, the areas inspected may be structurally unsafe; many inspections must be made during adverse weather conditions.

I. Knowledge, Skills, and Abilities:

Knowledge of:

- modern principles and practices of mechanical, electrical, or structural engineering;
- soils and geological structure as they relate to structural design;
- building construction;
- building inspection techniques and uniform building codes;
- principles of effective human relations and dealing with the public;

- department policies and procedures.

Ability to:

- conduct field surveys to obtain data for use in preparing plans and specifications for engineering improvements;
- coordinate the work of others;
- assign appropriate priorities to work activities based on organizational goals and situational pressures;
- prepare complete and concise reports and recommendations on structural engineering problems;
- establish working relationships with coworkers, consultants, contractors, and other agencies' personnel.